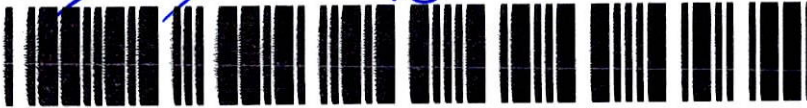




Ship Via:

DART
AEROSPACE
S016969

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TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com



Crosstube Turning Detail

PART NO: D212-664-101TRN
Revision:
Operation: Start up Operation
Change No:

Mfg Date: 12/04/17 Job No: 168759-F
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DART AEROSPACE LTD	Work Order: 168789-F
Description: Crosstube Assembly (205/212/412 High Fwd)	Part Number: D212-664-141
Inspection Dwg: D212-664-141 Rev: E	Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	0.200	+/-0.010	.200	✓	VERNO8	
	R0.063	+/-0.010	.063	✓	RG	
	2.740	+0.005/-0.000	2.744	✓	VERNO8	
	5.097	+/-0.030	5.113	✓		
	2.304	+0.005/-0.000	2.307	✓		
	2.340	+0.005/-0.000	2.3435	✓		
	2.398	+0.005/-0.000	2.403	✓		
	2.448	+0.005/-0.000	2.453	✓		
	2.498	+0.005/-0.000	2.502	✓		
	2.549	+0.005/-0.000	2.553	✓		
	2.599	+0.005/-0.000	2.603	✓		
	2.671	+0.005/-0.000	2.675	✓		
	2.701	+0.005/-0.000	2.705	✓		
SIDE B	0.200	+/-0.010	.200	✓	VERNO8	
	R0.063	+/-0.010	.063	✓	RG	
	2.740	+0.005/-0.000	2.744	✓	VERNO8	
	5.097	+/-0.030	5.110	✓		
	2.304	+0.005/-0.000	2.308	✓		
	2.340	+0.005/-0.000	2.344	✓		
	2.398	+0.005/-0.000	2.403	✓		
	2.448	+0.005/-0.000	2.453	✓		
	2.498	+0.005/-0.000	2.503	✓		
	2.549	+0.005/-0.000	2.553	✓		
	2.599	+0.005/-0.000	2.603	✓		
	2.671	+0.005/-0.000	2.675	✓		
	2.701	+0.005/-0.000	2.705	✓		
	126.514	+/-0.020	126.495	✓	TAPE	

SIDE A

SIDE B

.063
.500

± .010
± .010

.063
.500

✓
✓

RG
RG

.063
.500

± .010
± .010

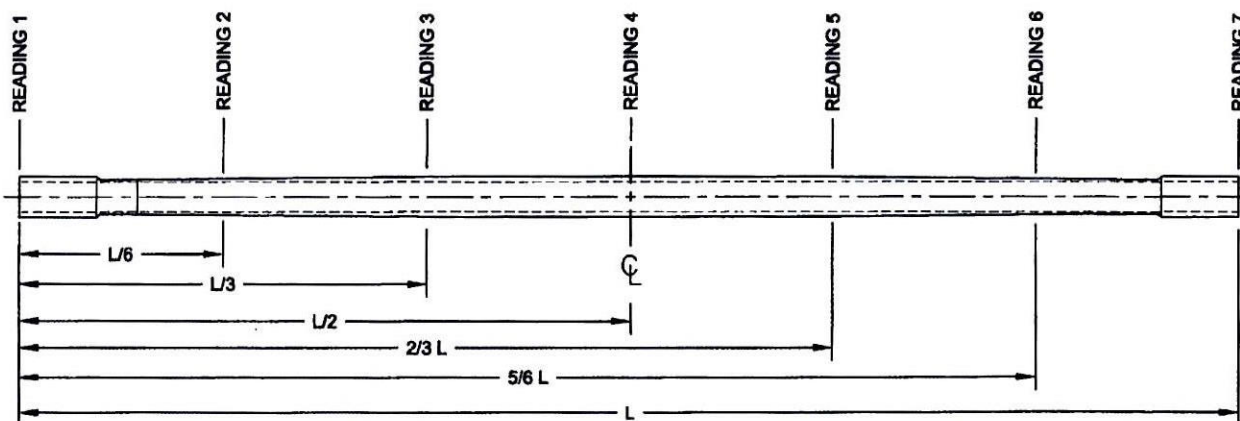
.063
.500

✓
✓

RG
RG

DART AEROSPACE LTD	Work Order: 168759F
Description: Crosstube Assembly (205/212/412 High Fwd)	Part Number: D212-664-141
Inspection Dwg: D212-664-141 Rev: E	Page 2 of 2

WALL THICKNESS MEASUREMENT



Location	WALL THICKNESS MEASUREMENT (IN)				Deviation Δw (max-min)	TOLERANCE
	w1	w2	w3	w4		
READING 1 L = 0"	378	369	389	389	.020	0.048"
READING 2 L = 21.09	289	236	245	247	.011	
READING 3 L = 42.17	353	356	363	359	.010	
READING 4 L = 63.25	383	381	387	382	.006	
READING 5 L = 84.34	362	346	355	369	.023	
READING 6 L = 105.43	252	229	237	259	.025	
READING 7 L = 126.514	385	374	383	387	.013	

Calibration Result

Actual Block Thickness: 200-400

Sitiescan 250 Measured Thickness: 200-400

Measured by: PMP	Audited by:	Preliminary Approval:
Date: 2017-12-04	Date:	Date:

Rev	Date	Change	Revised by	Approved
C	07.05.28	Dwg Rev updated (P/O D412-664-101)	KJ/JLM	
D	10.02.02	Dimension 126.514 was 126.51	KJ	
E	12.06.04	Wall thickness form added	KJ	
F	14.06.05	Dwg Rev updated	KJ	

Item	Qty -141	Qty -141B	Qty -141F	Part Number	Description
1	X			D212-664-141	CROSSTUBE ASSEMBLY (205/212/412 HIGH FWD)
2		X		D212-664-141B	CROSSTUBE ASSEMBLY (214 HIGH FWD)
3			X	D212-664-141F	CROSSTUBE ASSEMBLY (205/212/412 HIGH FWD) (ANODIZED)
4	1	1	1	D6005-128	CROSSTUBE
5	2		2	D2893-1	SUPPORT
6	4	4	4	D3595-063-450	RUBBER CUSHION
7		2		D5017-1	SUPPORT
8	4	4	4	MS21920-25	CLAMP (OR MS21920-26)
9	A/R	A/R	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

GENERAL NOTES:

- MATERIAL: MANUFACTURED FROM D6005-128
FINISHED LENGTH = 128.514±0.020
- FINISH -141 & -141B:
 - CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 - PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
 - MASK UNDERSIDE OF CROSSTUBE AS SHOWN (ZN C6-2 / C6-3, HATCHED AREA)
 - PAINT OUTSIDE PER DART QSI 005 4.2
 - REMOVE MASKING AND APPLY MATTE CLEAR COAT
- FINISH -141F:
 - ANODIZE PER MIL-A-8625, TYPE II, CLASS 1.
 - ALODINE (DO NOT ETCH) PER QSI 005 4.1.2
 - PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
 - MASK UNDERSIDE OF CROSSTUBE AS SHOWN (ZN C6-2 / C6-3, HATCHED AREA)
 - PAINT OUTSIDE PER DART QSI 005 4.2
 - REMOVE MASKING AND APPLY MATTE CLEAR COAT

***NOTE:** BETWEEN FINISHING OPERATIONS EXTREME CARE MUST BE TAKEN NOT TO CONTAMINATE OR DAMAGE FINISHED SURFACES.

- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER 'D212-664-XXX' AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS
- WEIGHT: D212-664-141/-141B/-141F = 33.6 lbs
- PART IS SYMMETRIC ABOUT CENTERLINE.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

MACHINING

- RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.

BENDING

- BEND PROGRESSIVELY WITH A MINIMUM OF 3 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 7.2% (BASED ON O.D.) IN LOWER HALF OF R35.5 BEND AND 6% (BASED ON O.D.) ON REMAINING TUBE.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.

ASSEMBLY

- TO INSTALL D2893-1 / D5017-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- INSTALL MS21920-25 CLAMPS (OR -26) WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE ON TOP SIDE OF CROSSTUBE.
- TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

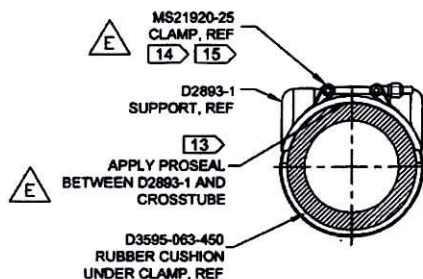
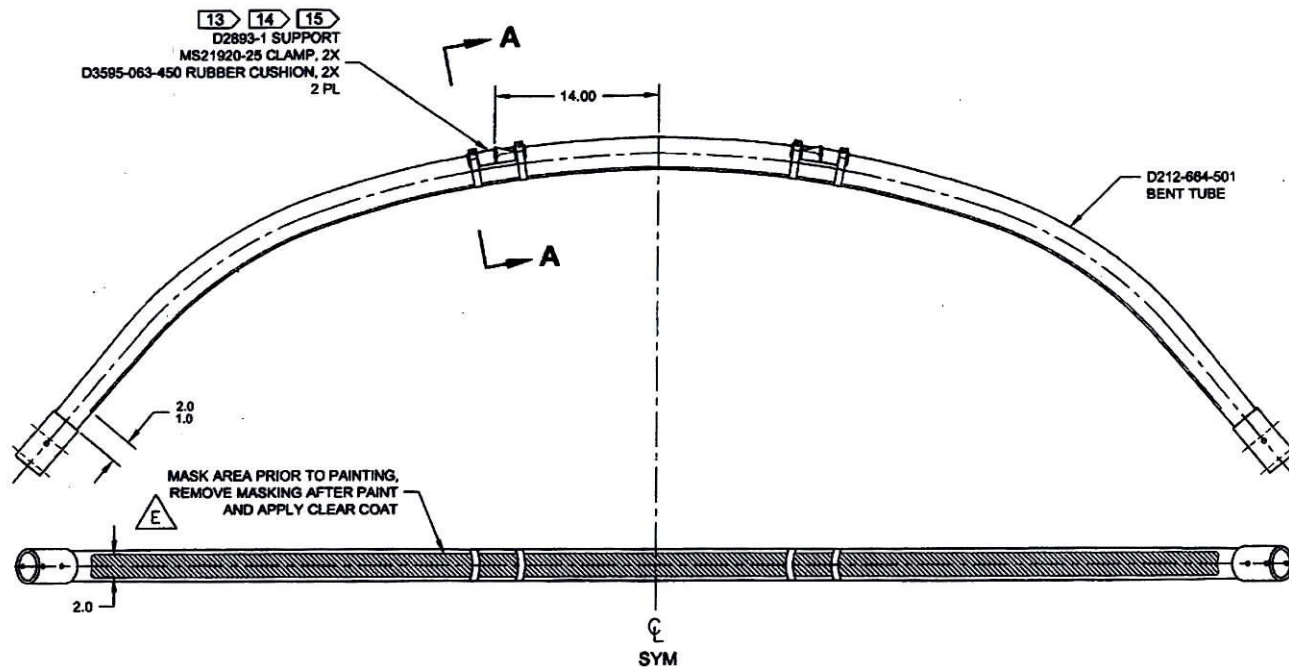
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WD

E	ADD -141F. D5017-1 WAS D2893-1 (-141B), PROSEAL WAS MAGNOBOND, NOTE 2: ADD INSPECTION WINDOW, NOTE 11: ALLOW 7.2% CRUSH, NOTE 15: ADD 72HR CURE AND RETORQUE FOR PROSEAL, ADD SHEET 3, CLAMPS REVERSED TO PREVENT CHAFING (B7-2, B7-3), BEND HEIGHT TOL. NOW 0.25 WAS 0.13 (C1-3), INCORP. DEC D-1/2/3	CP	14.04.01
D	REFORMAT/REVISE GENERAL NOTES/PART LIST; REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS; ADD -141B (ZN B4-2, D4-2); REMOVED REF & ADD TOLERANCES (ZN B4-3, C6-3, C8-3 & B6-3); RELOCATED FLAG #6 PER PAR 08-046 (ZN A5-3); MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4	RF	09.09.30
C	REMOVE -851 ABRASION STRIP; ADD MAGNOBOND 8388, CUSHION, REVERSE CLAMPS	PH	07.03.08
B	ADD HOLES FOR COMPATIBILITY WITH BHT/AA SKIDTUBES	PH	05.02.04
A	NEW ISSUE	CP	00.12.12
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	14.04.01		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D212-664-141	REV. E SHEET 1 OF 5
TITLE XTUBE ASSY (205/212/412 HI FWD)	SCALE NTS
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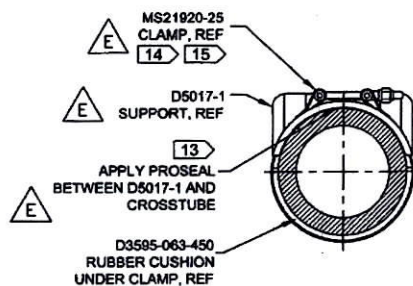
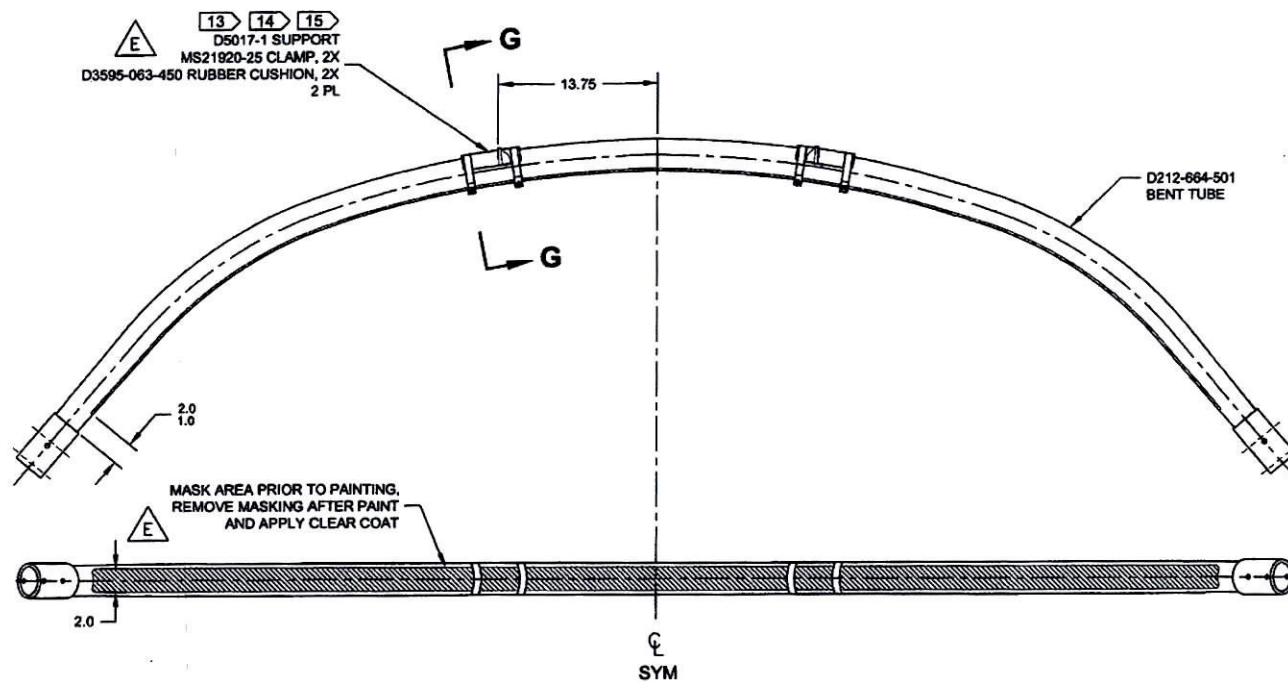
SECTION A-A
SCALE 4X

D212-664-141/-141F
ASSEMBLY DETAIL

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AND

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CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D212-664-141	SHEET 2 OF 5
APPROVED		TITLE	SCALE
DE APPR.		XTUBE ASS'Y (205/212/412 HI FWD)	NTS
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SECTION G-G
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D212-664-141B
ASSEMBLY DETAIL

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DE APPR.		XTUBE ASS'Y (205/212/412 HI FWD)	NTS
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